

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 1. (Currently Amended) A system for providing interactive program guide (~~IPQ~~
2 IPG), the system comprising:
3 a plurality of encoding units each operative to receive a plurality of ~~IPQ~~ IPG pages,
4 audio input and data input, wherein each of the plurality of ~~IPQ~~ IPG pages include a guide
5 portion and a video portion, and to generate a plurality of guide streams and at least one of a
6 video stream, an audio stream and a data stream, wherein each generated stream is assigned a
7 respective packet identifier (PID);
8 at least one transport stream generator operatively coupled to the plurality of
9 encoding units and assigned to a distribution node, each transport stream generator operative
10 to receive the generated streams from one or more of the plurality of encoding units and
11 multiplexing packets from the received streams into one or more transport streams;
12 a session manager coupled to the at least one transport stream generator and the
13 plurality of encoding units, the session manager being operative to manage the operation of
14 the plurality of encoding units and the at least one transport stream generator and to service
15 demands of the distribution node; and
16 a bandwidth manager, coupled to the at least one transport stream generator for
17 monitoring resources usage and availability for encoding by the plurality of encoding units, the
18 bandwidth manager, in response to a demand from the distribution node, obtains information
19 regarding whether sufficient bandwidth and PIDs are available in the one or more transport
20 streams being transmitted to the distribution node to service the demand and communicates
21 the obtained information to the session manager for servicing the demand.

1 2. (Original) The system of claim 1, further comprising:
2 a bandwidth manager coupled to the plurality of encoding units and the session
3 manager, the bandwidth manager operative to monitor usage and report to the session
4 manager.

1 3. (Currently Amended) The system of claim 1, wherein the plurality of
2 encoding units are operative to encode only once each ~~IPQ~~ IPG page to be transmitted from
3 the at least one transport stream generator.

1 4. (Previously Presented) The system of claim 1, wherein the number of
2 transport streams generated by each transport stream generator is dynamically adjusted based
3 on demands from the distribution node being served by the transport stream generator.

1 5. (Original) The system of claim 1, wherein the session manager directs a
2 particular transport stream generator to generate an additional transport stream as usage
3 increases and exceeds the capacity of currently transmitted transport stream(s).

1 6. (Original) The system of claim 1, wherein the session manager directs a
2 particular transport stream generator to generate an additional transport stream if the number
3 of streams to be transmitted by the particular transport stream generator exceeds the capacity
4 of currently transmitted transport stream(s).

1 7. (Previously Presented) The system of claim 1, wherein the session
2 manager, in response to the information communicated by the bandwidth manager, directs a
3 particular transport stream generator to generate an additional transport stream when the
4 information indicates a required number of PIDs exceeds a maximum number of PIDs
5 supported by currently transmitted transport stream(s).

1 8. (Original) The system of claim 1, wherein the session manager directs a
2 particular transport stream generator to tear down a transport stream if usage falls below the
3 capacity of remaining transport streams.

1 9. (Original) The system of claim 1, wherein each transport stream generator
2 is operative to serve a respective group of terminals within a particular neighborhood.

1 10. (Currently Amended) The system of claim 1, wherein each transport stream
2 generator is operable to provide differentiated ~~HPQ~~ IPG via the one or more transport streams
3 generated by the transport stream generator.

1 11. (Currently Amended) The system of claim 1, wherein a plurality of transport
2 streams are generated by a particular transport stream generator, and wherein each of the
3 plurality of transport streams includes a respective set of ~~IPQ~~ IPG pages represented by the
4 generated streams.

1 12. (Previously Presented) The system of claim 11, wherein the plurality of
2 transport streams from the particular transport stream generator include transport streams
3 with overlapping guide PIDs.

1 13. (Currently Amended) The system of claim 11, wherein each of the plurality of
2 transport streams from the particular transport stream generator includes one or more
3 common ~~IPQ~~ IPG pages.

1 14. (Currently Amended) The system of claim 11, wherein the sets of ~~IPQ~~ IPG
2 pages for the plurality of transport streams from the particular transport stream generator are
3 organized to reduce likelihood of switching between transport streams at a receiving device.

1 15. (Currently Amended) The system of claim 11, wherein the sets of ~~IPQ~~ IPG
2 pages for the plurality of transport streams from the particular transport stream generator are
3 organized to increase likelihood of PID transitions within the same transport stream.

1 16. (Original) The system of claim 1, wherein each encoding unit is operative
2 to implement a slice-based encoding scheme.

- 1 17. (Original) The system of claim 1, wherein each encoding unit is operative
2 to implement a picture-based encoding scheme.

1 18. (Currently Amended) A system for providing interactive program guide (~~IPQ~~
2 IPG), the system comprising:

3 at least one transport stream generator assigned to a distribution node, each transport
4 stream generator including at least one encoder unit operative to receive a plurality of ~~IPQ~~
5 IPG pages, audio input and data input, wherein each of the plurality of ~~IPQ~~ IPG pages
6 include a guide portion and a video portion, and to generate a plurality of guide streams and
7 at least one of a video stream, an audio stream and a data stream, wherein each of the
8 plurality of streams generated for the plurality of ~~IPQ~~ IPG pages is assigned a respective
9 packet identifier (PID), each transport stream generator operative to multiplexing packets
10 from the received streams into one or more transport streams having included therein the
11 plurality of streams generated for the plurality of encoded ~~IPQ~~ IPG pages;

12 a session manager coupled to the at least one transport stream generator and operative
13 to manage the operation of the plurality of encoding units and the at least one transport
14 stream generator and to service demands of the distribution node; and

15 a bandwidth manager, coupled to the at least one transport stream generator for
16 monitoring resources usage and availability for encoding, the bandwidth manager, in response
17 to a demand from the distribution node, obtains information regarding whether sufficient
18 bandwidth and PIDs are available in the one or more transport streams being transmitted to
19 the distribution node to service the demand and communicates the obtained information to
20 the session manager for servicing the demand.

1 19. (Canceled)

1 20. (Currently Amended) A method for providing interactive program guide (~~IPQ~~
2 IPG) from a transmission source to a plurality of terminals, the method comprising:
3 receiving a plurality of ~~IPQ~~ IPG pages, audio input and data input, wherein each of
4 the plurality of ~~IPQ~~ IPG pages include a guide portion and a video portion,
5 generating a plurality of guide streams and at least one of a video stream, an audio
6 stream and a data stream, wherein each generated stream is assigned a respective packet
7 identifier (PID);
8 multiplexing packets from the received streams into one or more transport streams;
9 monitoring the operation of the plurality of encoding units encoding the plurality of
10 ~~IPQ~~ IPG pages, audio input and data input;
11 monitoring demands from the plurality of terminals;
12 determining a current capacity of one or more transport streams to determine whether
13 sufficient bandwidth and PIDs are available in the one or more transport streams being
14 transmitted to the plurality of terminals to service the demands;
15 comparing the demands from the plurality of terminals against the current capacity;
16 and
17 dynamically adjusting the number of transport streams to be transmitted to the
18 plurality of terminals based on a result of the comparing.

1 21. (Original) The method of claim 20, further comprising:
2 providing an additional transport stream for the plurality of terminals if the demands
3 exceeds the current capacity.

1 22. (Original) The method of claim 20, further comprising:
2 providing an additional transport stream for the plurality of terminals if a required
3 number of packet identifiers (PIDs) exceeds a maximum number of PIDs supported by the
4 one or more transport streams currently being transmitted.

1 23. (Original) The method of claim 20, further comprising:
2 tearing down a particular currently transmitted transport stream if the demands fall
3 below the capacity of remaining transport streams.